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Statistical memory of meg signals at photosensitive epilepsy

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Abstract

Here we discuss the remarkable role of the statistical memory effects in the human brain functioning at photosensitive epilepsy (PSE). We have analyzed three independent statistical memory quantifiers for the magnetoencephalographic (MEG) signals. These quantifiers reflect the dynamical characteristics of neuromagnetic brain responses to a flickering stimulus of different color combinations. Results for a group of control subjects are contrasted with those from a patient with PSE. The emergence of the strong memory and the transition to a regular and robust regime of chaotic behavior of the signals in separate areas is characteristic for a patient with PSE versus a healthy brain. © 2008 World Scientific Publishing Company.

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Keywords

Human brain, Information quantifiers, Photosensitive epilepsy, Statistical memory, Stochastic non-Markov processes